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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,282	05/01/2001	Yukihiko Sakashita	35.C15336	3070

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NEW YORK, NY 10112

EXAMINER

NGUYEN, KIMNHUNG T

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 08/06/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/845,282

Applicant(s)

SAKASHITA, YUKIHIKO

Examiner

Kimnhung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6,9,13,17,21,24 and 42 is/are allowed.
- 6) ☒ Claim(s) 1-3,7,8,10-12,14-16, 18-20, 22-23 and 25-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

This Application has been examined. The claims 1-42 are pending. The examination results are as following.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7-8, 10-12, 14-16 and 25-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuda (US 5,896,163).

Regarding claims 1 and 39, Tsuda et al. disclose in figure 1, a display apparatus for irradiating with light generated by a light source a light modulating element and forming a display image plane from the light (see a laser liquid crystal maker with a projects light connected to controller (7) and display on the liquid crystal, see column 4, lines 18-27 and column 6, lines 8-24) which is transmitted through or reflected by the light modulating element, comprising input image calculating means (Qi) for performing predetermined calculation according to an input display signal; light quantity controlling means (R1) for controlling light quantity irradiated onto said light modulating element according to a result of said calculation (see figures 1-2C, see column 7, lines 31-37); and a memory for storing the display signal subjected to the calculation by said input image calculating means, and thereafter for outputting the display signal to said light modulating element (see software construction, see figures 2A, 3 and 5-6, see column 6, lines 38-45).

Regarding claims 2 and 40, Tsuda et al. disclose in figure 1, a display apparatus for irradiating light generated by a light source (see laser beam 12) onto a light modulating element inputting modulated signal formulated by converting a display signal inputted in an analog state into digital display signals and thereafter subjecting the digital display signal to a predetermined processing, and for forming a display image plane from the light transmitted through the light modulating element (see column 6, lines 8-24), comprising input image calculating means for performing predetermined calculation according to the display signal; light quantity controlling means for controlling light quantity (Q_i) irradiated onto said light modulating element according to a result of said calculation; and an adjusting circuit (see adjusting voltage(V_i , see abstract, see column 4, lines 5-10) for adjusting the display signal according to a result of the calculation, wherein said adjusting circuit adjusts the display signal before the display signal in said analog state are converted into digital display signal.

Regarding claims 3 and 41, Tsuda et al. disclose a display apparatus for irradiating light generated by a light source onto a light modulating element, and for forming a display image plane with the light transmitted through or reflected by the light modulating element, comprising input image calculating means for performing a predetermined calculation according to an input display signal; and light quantity controlling means for controlling light quantity irradiated onto said light modulating element according to a result of the calculation as discusses above, wherein said light quantity controlling means sets a change rate of light quantity, such that an inherent the change rate at decreasing the light quantity is smaller than a change rate at increasing the light

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quantity (because the rate of light quantity depends on applied voltage V_i , (see column 4, lines 47-50).

Regarding claims 7-8, Tsuda et al. disclose the display apparatus further comprising an adjusting circuit for adjusting display signal according to a result of the calculation (see adjusting voltage V_i).

Regarding claims 10-12, Tsuda et al. disclose, wherein said calculation is calculation to give maximum luminance in said display signals inputted within a predetermined period (see figure 6, column 8, lines 44-55).

Regarding claims 14-16, Tsuda et al. disclose wherein said calculation is calculation to give an inherent number of data exceeding a predetermined luminance among luminance data included in said display signals inputted within a predetermined period include (see column 5, lines 8-10)

Regarding claims 25-28, Tsuda et al. disclose the display apparatus comprising means for setting quantity of changing irradiation light quantity, so as to set changing quantity or change rate of said irradiating light quantity (see voltage V_i).

Regarding claims 29-30, Tsuda et al. disclose the display apparatus wherein said change rate is greater in a trend to increase irradiation light quantity than in a trend to decrease irradiation light quantity (see voltage V_i).

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Regarding claims 31-34, Tsuda et al. disclose the display apparatus, wherein said light quantity controlling means are means to be disposed between said light source and said light modulating element to control light quantity to be irradiated onto said light modulating element from said light source (see figure 1).

Regarding claims 35-38, Tsuda et al. disclose the display apparatus, wherein said light quantity controlling means is means to control voltage (see voltage Vi.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 18-20 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (5,896,163) in view of Hasegawa et al. (US 4,351,600).

Tsuda et al. disclose light quantity controlling means controls the light quantity based on the calculation results and said adjusting circuit performing the adjustment to the calculation result as discusses above. However, Tsuda et al. do not disclose wherein said light quantity controlling means controls the light quantity based on the calculation results and a detection results by said sensors, or wherein said adjusting circuit performing the adjustment to the

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calculation result and the detection result by said sensor. Hasegawa discloses in figure 1, a detecting result by a sensor (see control photography device comprising a quality-of light detecting circuit (1) having sensor to detect the speed of the light, see figure 1, column 2, lines).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the using quality-of light detecting circuit (1) results by a sensor to detect the speed of the light as taught by Hasegawa et al. into the system having calculation results and said adjusting circuit performing the adjustment to the calculation result of Tsuda because this would for providing the corresponding to the maximum light emission time of the speed light (see column 2, lines 58-60).

Allowable Subject Matter

5. Claims 4-6, 9, 13, 17, 21, 24, and 42 are allowed.

The following is an examiner's statement of reasons for allowance: The present invention is directed to a display apparatus for irradiating light generated by a light source onto a light modulating element, and for forming a display image plane from the light transmitted though or reflected by said light modulating element, comprising input image calculating means for performing a predetermined calculation according to an input display signals; and light quantity controlling means for increasing or decreasing a light quantity irradiated onto said light modulating element step by step according to a value determined by result of said calculation. The combination of closest prior art, Tsuda et al. (US 5,896,163), Hasegawa et al. disclose a similar system also disclose a display apparatus for irradiating light generated by a light source onto a light modulating element, and for forming a display image plane from the light

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transmitted though or reflected by said light modulating element, comprising input image calculating means for performing a predetermined calculation according to an input display signals; and light quantity controlling means for increasing or decreasing a light quantity irradiated onto said light modulating element and voltage threshold also applied to liquid crystal of the system. However, they fail to teach, wherein the threshold value at which said light quantity controlling means increases the light quantity from a first stage being a predetermined stage into a second stage increased therefrom by one step according to the calculation is different from a threshold value at which said light quantity controlling means decreases the light quantity from the second stage into a stage of smaller light quantity as claims 4 and 42.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimnhung Nguyen whose telephone number (703) 308-0425.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached on **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

Or faxed to:

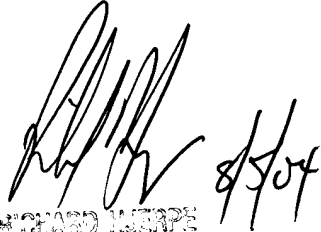
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(703) 872-9314 (for Technology Center 2600 only).

Hand-delivery response should be brought to: Crystal Park II, 2121 Crystal Drive,
Arlington, VA Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

Kimnhung Nguyen
August 4, 2004



RICHARD H. HAYS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600